

09/622522  
1/27 534 Rec'd PCT/PTO 18 AUG 2000

## SEQUENCE LISTING

&lt;110&gt; Sagami Chemical Research Center et al.

5 <120> Human Proteins Having Transmembrane Domains and DNAs Encoding these  
Proteins

&lt;130&gt; 661098

10 &lt;141&gt; 1999-02-25

&lt;150&gt; JP 10-046607

&lt;151&gt; 1998-02-27

15 &lt;160&gt; 28

&lt;170&gt; Windows 95 (Word 98)

&lt;210&gt; 1

20 &lt;211&gt; 129

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

25 Met His Phe Leu Phe Arg Phe Ile Val Phe Phe Tyr Leu Trp Gly Leu

1 5 10 15

Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu Ser Thr Glu Glu Val Lys

20 25 30

Ile Glu Val Leu His Arg Pro Glu Asn Cys Ser Lys Thr Ser Lys Lys

30 35 40 45

Gly Asp Leu Leu Asn Ala His Tyr Asp Gly Tyr Leu Ala Lys Asp Gly

50 55 60

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Ser Lys Phe Tyr Cys Ser Arg Thr Gln Asn Glu Gly His Pro Lys Trp  
 65 70 75 80  
 Phe Val Leu Gly Val Gly Gln Val Ile Lys Gly Leu Asp Ile Ala Met  
 85 90 95  
 5 Thr Asp Met Cys Pro Gly Glu Lys Arg Lys Val Val Ile Pro Pro Ser  
 100 105 110  
 Phe Ala Tyr Gly Lys Glu Gly Tyr Asp Lys Pro Leu Leu Ala Lys Gly  
 115 120 125  
 Ile  
 10  
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 1 5 10 15  
 Tyr Leu Lys Arg Leu Pro Val Pro Glu Ser Ile Thr Gly Phe Ala Arg  
 20 20 25 30  
 Leu Thr Val Ser Glu Trp Leu Arg Leu Leu Pro Phe Leu Gly Val Leu  
 35 40 45  
 Ala Leu Leu Gly Tyr Leu Ala Val Arg Pro Phe Leu Pro Lys Lys Lys  
 50 55 60  
 25 Gln Gln Lys Asp Ser Leu Ile Asn Leu Lys Ile Gln Lys Glu Asn Pro  
 65 70 75 80  
 Lys Val Val Asn Glu Ile Asn Ile Glu Asp Leu Cys Leu Thr Lys Ala  
 85 90 95  
 Ala Tyr Cys Arg Cys Trp Arg Ser Lys Thr Phe Pro Ala Cys Asp Gly  
 30 100 105 110  
 Ser His Asn Lys His Asn Glu Leu Thr Gly Asp Asn Val Gly Pro Leu  
 115 120 125

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Ile Leu Lys Lys Lys Glu Val

130

135

&lt;210&gt; 3

5 &lt;211&gt; 79

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 3

10 Met Pro Val Ala Val Gly Pro Tyr Gly Gln Ser Gln Pro Ser Cys Phe

1

5

10

15

Asp Arg Val Lys Met Gly Phe Val Met Gly Cys Ala Val Gly Met Ala

20

25

30

Ala Gly Ala Leu Phe Gly Thr Phe Ser Cys Leu Arg Ile Gly Met Arg

15

35

40

45

Gly Arg Glu Leu Met Gly Gly Ile Gly Lys Thr Met Met Gln Ser Gly

50

55

60

Gly Thr Phe Gly Thr Phe Met Ala Ile Gly Met Gly Ile Arg Cys

65

70

75

20

&lt;210&gt; 4

&lt;211&gt; 144

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

25

&lt;400&gt; 4

Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu Leu

1

5

10

15

Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala Phe Asp

30

20

25

30

Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys Asn Thr Leu

35

40

45

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Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala Phe Phe Cys Val  
 50 55 60  
 Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu Gly Leu Asn Met Pro  
 65 70 75 80  
 5 Leu Leu Ala Tyr His Ile Trp Arg Tyr Met Ser Arg Pro Val Met Ser  
 85 90 95  
 Gly Pro Gly Leu Tyr Asp Pro Thr Thr Ile Met Asn Ala Asp Ile Leu  
 100 105 110  
 Ala Tyr Cys Gln Lys Glu Gly Trp Cys Lys Leu Ala Phe Tyr Leu Leu  
 10 115 120 125  
 Ala Phe Phe Tyr Tyr Leu Tyr Gly Met Ile Tyr Val Leu Val Ser Ser  
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 20 25 30  
 Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly  
 25 35 40 45  
 Pro Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser  
 50 55 60  
 Gly Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Asp Leu Asp Cys  
 65 70 75 80  
 30 Ser Asp Gly Ser Asp Glu Glu Glu Cys Arg Ile Glu Pro Cys Thr Gln  
 85 90 95  
 Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu Pro Cys Pro Cys Thr Gly

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	100	105	110
	Val Ser Asp Cys Ser Gly Gly Thr Asp Lys Lys Leu Arg Asn Cys Ser		
	115	120	125
	Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg Cys Thr Leu Ser Asp Asp		
5	130	135	140
	Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly His Pro Asp Cys Pro Asp		
	145	150	155
	Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn Glu Ile Leu Pro Glu Gly		
	165	170	175
10	Asp Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val Thr Ser		
	180	185	190
	Leu Arg Asn Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val		
	195	200	205
	Pro Ser Val Gly Asn Ala Thr Ser Ser Ser Ala Gly Asp Gln Ser Gly		
15	210	215	220
	Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala Ala Ala Val Leu Ser Ala		
	225	230	235
	Ser Leu Val Thr Ala Thr Leu Leu Leu Leu Ser Trp Leu Arg Ala Gln		
	245	250	255
20	Glu Arg Leu Arg Pro Leu Gly Leu Leu Val Ala Met Lys Glu Ser Leu		
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	Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro		
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30	<400> 6		
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	1	5	10
			15

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Glu Ala Thr Asn Val Tyr Leu Ile Val Ile Leu Val Ser Phe Gly Leu  
                     20                    25                    30  
 Phe Met Tyr Ala Lys Arg Asn Lys Arg Arg Ile Met Arg Ile Phe Ser  
                     35                    40                    45  
 5 Val Pro Pro Thr Glu Glu Thr Leu Ser Glu Pro Asn Phe Tyr Asp Thr  
                     50                    55                    60  
 Ile Ser Lys Ile Arg Leu Arg Gln Gln Leu Glu Met Tyr Ser Ile Ser  
                     65                    70                    75                    80  
 Arg Lys Tyr Asp Tyr Gln Gln Pro Gln Asn Gln Ala Asp Ser Val Gln  
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 Leu Ser Leu Glu  
                     100  
  
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 Thr His Ile Asp Val His Ile His Gln Glu Ser Ala Leu Ala Lys Leu  
                     20                    25                    30  
 Leu Leu Thr Cys Cys Ser Ala Leu Arg Pro Arg Ala Thr Gln Ala Arg  
 25                    35                    40                    45  
 Gly Ser Ser Arg Leu Leu Val Ala Ser Trp Val Met Gln Ile Val Leu  
                     50                    55                    60  
 Gly Ile Leu Ser Ala Val Leu Gly Gly Phe Phe Tyr Ile Arg Asp Tyr  
                     65                    70                    75                    80  
 30 Thr Leu Leu Val Thr Ser Gly Ala Ala Ile Trp Thr Gly Ala Val Ala  
                                     85                                    90                                    95  
 Val Leu Ala Gly Ala Ala Ala Phe Ile Tyr Glu Lys Arg Gly Gly Thr

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	100	105	110
	Tyr Trp Ala Leu Leu Arg Thr Leu Leu Ala Leu Ala Ala Phe Ser Thr		
	115	120	125
	Ala Ile Ala Ala Leu Lys Leu Trp Asn Glu Asp Phe Arg Tyr Gly Tyr		
5	130	135	140
	Ser Tyr Tyr Asn Ser Ala Cys Arg Ile Ser Ser Ser Ser Asp Trp Asn		
	145	150	155
	Thr Pro Ala Pro Thr Gln Ser Pro Glu Glu Val Arg Arg Leu His Leu		
	165	170	175
10	Cys Thr Ser Phe Met Asp Met Leu Lys Ala Leu Phe Arg Thr Leu Gln		
	180	185	190
	Ala Met Leu Leu Gly Val Trp Ile Leu Leu Leu Leu Ala Ser Leu Ala		
	195	200	205
	Pro Leu Trp Leu Tyr Cys Trp Arg Met Phe Pro Thr Lys Gly Val Ser		
15	210	215	220
	Pro		
	225		
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20	<211> 387		
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	<213> Homo sapiens		
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	agacaaaaga aagaggagag caccgaagaa gtgaaaatag aagttttgca tcgtccagaa	120	
	aactgctcta agacaagcaa gaagggagac ctactaaatg cccattatga cggctacctg	180	
	gctaaagacg gctcgaaatt ctactgcagc cggacacaaa atgaaggcca ccccaaattg	240	
	tttgctcttg gtgttgaggca agtcataaaa ggcctagaca ttgctatgac agatatgtgc	300	
30	cctggagaaa agcgaaaagt agttataccc ccttcatttg catacggaaa ggaaggctat	360	
	gataaacctc tacttgcaaa gggaatt	387	

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&lt;210&gt; 9

&lt;211&gt; 405

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

5

&lt;400&gt; 9

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ctcccagttcc ctgaaagcat taccgggttc gctaggtcca cagtttcaga atggcttcgg	120
ttattgcctt tccttggtgt actgcactt cttggctacc ttgcagttcg tccattcctc	180
ccgaagaaga aacaacagaa ggatagcttg attaattctta aaatacaaaa ggaaaatccg	240
aaagtagtga atgaaataaa cattgaagat ttgtgtctta ctaaagcagc ttattgtagg	300
tgttggcggt ctaaacggt tcctgcctgc gatgggtcac ataataaaca caatgaattg	360
acaggagata atgtgggtcc actaatactg aagaagaaag aagta	405

15

&lt;210&gt; 10

&lt;211&gt; 237

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

20

&lt;400&gt; 10

atgccggtgg ccgtgggtcc ctacggacag tcccagccaa gctgcttcga ccgtgtcaaa	60
atgggcttcg tgatgggttg cgcgtgggc atggcgccg gggcgctctt cggcaccttt	120
tcctgtctca ggatcggaat gcggggtcga gagctgatgg gcggcattgg gaaaaccatg	180
atgcagagtg gcggcacctt tggcacattc atggccattg ggatgggcat ccgatgc	237

25

&lt;210&gt; 11

&lt;211&gt; 432

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

30

&lt;400&gt; 11

atggcgcttca cgttcgcggc cttctgctac atgctggcgc tgctgctcac tgccgcgtc	60
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	atcttcttcg ccatttggca cattatagca tttgatgagc tgaagactga ttacaagaat	120
	cctatagacc agtgaatac cctgaatccc cttgtactcc cagagtacct catccacgct	180
	ttcttctgtg tcatgtttct ttgtgcagca gagtggctta cactgggtct caatatgccc	240
	ctcttggcat atcatatttg gaggtatatg agtagaccag tgatgagtgg cccaggactc	300
5	tatgacctta caaccatcat gaatgcagat attctagcat attgtcagaa ggaaggatgg	360
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	ttggtgagct ct	432
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	ccgacctctg cccaggccgc agggcccagc tcaggctcgt gccaccac caagttccag	180
	tgccgcacca gtggcttatg cgtgcccctc acctggcgct gcgacaggga cttggactgc	240
	agcgatggca gcgatgagga ggagtgcagg attgagccat gtaccagaa agggcaatgc	300
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	gacaagaaac tgcgcaactg cagccgctg gcctgctag caggcgagct ccgttgacg	420
	ctgagcgatg actgcattcc actcacgtgg cgctgcgacg gccaccaga ctgtcccac	480
	tccagcgacg agctcggctg tggaaccaat gagatcctcc cggaagggga tgccacaacc	540
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25	ccccctgtga ccctggagag tgtcccctct gtcgggaatg ccacatctc ctctgccga	660
	gaccagtctg gaagcccaac tgccatggg gttattgcag ctgctgcggg gctcagtga	720
	agcctggtca ccgccaccct cctccttttg tcctggctcc gagcccagga gcgcctccgc	780
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	ctgccc	846
30	<210> 13	
	<211> 300	

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&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 13

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 aggagaatta tgaggatatt cagtgtgcca cctacagagg aaactttgtc agagcccaac 180  
 ttttatgaca cgataagcaa gattcgttta agacaacaac tggaaatgta ttccatttca 240  
 agaaagtacg actatcagca gccacaaaac caagctgaca gtgtgcaact ctcattggaa 300

10

&lt;210&gt; 14

&lt;211&gt; 675

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

15

&lt;400&gt; 14

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 gtgcacatcc accaggagtc tgccctggcc aagctcctgc tcacctgctg ctctgcgctg 120  
 cggccccggg ccaccagggc caggggcagc agccggctgc tggaggcctc gtgggtgatg 180  
 20 cagatcgtgc tggggatcct gagtgcagtc ctaggaggat ttttctacat ccgcgactac 240  
 accctcctcg tcacctggg agctgccatc tggacagggg ctgtggctgt gctggctgga 300  
 gctgctgcct tcatttacga gaaacggggt ggtacatact ggccctgct gaggactctg 360  
 ctagecgtgg cagctttctc cacagccatc gctgccctca aactttggaa tgaagatttc 420  
 cgatatggct actcttatta caacagtgcc tgccgcctct ccagctcgag tgactggaac 480  
 25 actccagccc cactcagag tccagaagaa gtcagaaggc tacacctatg tacctccttc 540  
 atggacatgc tgaaggcctt gttcagaacc cttcaggcca tgctcttggg tgtctggatt 600  
 ctgctgcttc tggcatctct ggccctctg tggctgtact gctggagaat gttcccaacc 660  
 aaaggggtga gtccc 675

30

&lt;210&gt; 15

&lt;211&gt; 761

&lt;212&gt; DNA

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&lt;213&gt; Homo sapiens

&lt;400&gt; 15

gacatccacg gggcgcgagt gacacgcggg agggagagca gtgttctgct ggagccgatg 60  
 5 ccaaaaacc atg cat ttc tta ttc aga ttc att gtt ttc ttt tat ctg tgg 111  
     Met His Phe Leu Phe Arg Phe Ile Val Phe Phe Tyr Leu Trp  
         1                    5                    10  
 ggc ctt ttt act gct cag aga caa aag aaa gag gag agc acc gaa gaa 159  
 Gly Leu Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu Ser Thr Glu Glu  
 10 15                    20                    25                    30  
 gtg aaa ata gaa gtt ttg cat cgt cca gaa aac tgc tct aag aca agc 207  
 Val Lys Ile Glu Val Leu His Arg Pro Glu Asn Cys Ser Lys Thr Ser  
         35                    40                    45  
 aag aag gga gac cta cta aat gcc cat tat gac ggc tac ctg gct aaa 255  
 15 Lys Lys Gly Asp Leu Leu Asn Ala His Tyr Asp Gly Tyr Leu Ala Lys  
         50                    55                    60  
 gac ggc tcg aaa ttc tac tgc agc cgg aca caa aat gaa ggc cac ccc 303  
 Asp Gly Ser Lys Phe Tyr Cys Ser Arg Thr Gln Asn Glu Gly His Pro  
         65                    70                    75  
 20 aaa tgg ttt gtt ctt ggt gtt ggg caa gtc ata aaa ggc cta gac att 351  
 Lys Trp Phe Val Leu Gly Val Gly Gln Val Ile Lys Gly Leu Asp Ile  
         80                    85                    90  
 gct atg aca gat atg tgc cct gga gaa aag cga aaa gta gtt ata ccc 399  
 Ala Met Thr Asp Met Cys Pro Gly Glu Lys Arg Lys Val Val Ile Pro  
 25 95                    100                    105                    110  
 cct tca ttt gca tac gga aag gaa ggc tat gat aaa cct cta ctt gca 447  
 Pro Ser Phe Ala Tyr Gly Lys Glu Gly Tyr Asp Lys Pro Leu Leu Ala  
         115                    120                    125  
 aag gga att tgaaaaagat gagaagccac gtgacaagtc atatcaggat gcag 500  
 30 Lys Gly Ile  
  
 ttttagaaga tattttttaag aagaatgacc atgatggtga tggcttcatt tctcccaagg 560

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aatacaatgt ataccaacac gatgaactat agcatatttg tattttctact ttttttttta 620  
 gctattttact gtactttatg tataaaacaa agtcactttt ctccaagttg tatttgctat 680  
 ttttccccta tgagaagata ttttgatctc cccaatacat tgatttttgt ataataaaat 740  
 gtgaggctgt tttgcaaact t 761

5

&lt;210&gt; 16

&lt;211&gt; 129

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

10

&lt;400&gt; 16

Met His Phe Leu Phe Arg Phe Ile Val Phe Phe Tyr Leu Trp

1

5

10

Gly Leu Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu Ser Thr Glu Glu

15

15

20

25

30

Val Lys Ile Glu Val Leu His Arg Pro Glu Asn Cys Ser Lys Thr Ser

35

40

45

Lys Lys Gly Asp Leu Leu Asn Ala His Tyr Asp Gly Tyr Leu Ala Lys

50

55

60

20

Asp Gly Ser Lys Phe Tyr Cys Ser Arg Thr Gln Asn Glu Gly His Pro

65

70

75

Lys Trp Phe Val Leu Gly Val Gly Gln Val Ile Lys Gly Leu Asp Ile

80

85

90

Ala Met Thr Asp Met Cys Pro Gly Glu Lys Arg Lys Val Val Ile Pro

25

95

100

105

110

Pro Ser Phe Ala Tyr Gly Lys Glu Gly Tyr Asp Lys Pro Leu Leu Ala

115

120

125

Lys Gly Ile

30

&lt;210&gt; 17

&lt;211&gt; 701

&lt;212&gt; DNA

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&lt;213&gt; Homo sapiens

&lt;400&gt; 17

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 1  
 agc gtg gcc cgt atc gtg aag gtg cag ctc cct gca tat ctg aag cgg 105  
 Ser Val Ala Arg Ile Val Lys Val Gln Leu Pro Ala Tyr Leu Lys Arg  
 5 10 15 20  
 10 ctc cca gtc cct gaa agc att acc ggg ttc gct agg ctc aca gtt tca 153  
 Leu Pro Val Pro Glu Ser Ile Thr Gly Phe Ala Arg Leu Thr Val Ser  
 25 30 35  
 gaa tgg ctt cgg tta ttg cct ttc ctt ggt gta ctc gca ctt ctt ggc 201  
 Glu Trp Leu Arg Leu Leu Pro Phe Leu Gly Val Leu Ala Leu Leu Gly  
 15 40 45 50  
 tac ctt gca gtt cgt cca ttc ctc ccg aag aag aaa caa cag aag gat 249  
 Tyr Leu Ala Val Arg Pro Phe Leu Pro Lys Lys Lys Gln Gln Lys Asp  
 55 60 65  
 agc ttg att aat ctt aaa ata caa aag gaa aat ccg aaa gta gtg aat 297  
 20 Ser Leu Ile Asn Leu Lys Ile Gln Lys Glu Asn Pro Lys Val Val Asn  
 70 75 80  
 gaa ata aac att gaa gat ttg tgt ctt act aaa gca gct tat tgt agg 345  
 Glu Ile Asn Ile Glu Asp Leu Cys Leu Thr Lys Ala Ala Tyr Cys Arg  
 85 90 95 100  
 25 tgt tgg cgt tct aaa acg ttt cct gcc tgc gat ggt tca cat aat aaa 393  
 Cys Trp Arg Ser Lys Thr Phe Pro Ala Cys Asp Gly Ser His Asn Lys  
 105 110 115  
 cac aat gaa ttg aca gga gat aat gtg ggt cca cta ata ctg aag aag 441  
 His Asn Glu Leu Thr Gly Asp Asn Val Gly Pro Leu Ile Leu Lys Lys  
 30 120 125 130  
 aaa gaa gta taataataat aacaatattt tctcattctt tgtgtataga 490  
 Lys Glu Val

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135

aaatttttaaa atggtggtct taattattac tactggttga acaattatctt cttccaattt 550  
 attttcttcc tgcactactg tttgtatttg atcctttgtc tattcagtca cttaattaga 610  
 aattaaattg tcaagcctct tattctgact tcaaagaatt aatgtatctt ccaacaataa 670  
 5 aatcacttct gattttaatc taggaaaacc t 701

&lt;210&gt; 18

&lt;211&gt; 135

&lt;212&gt; PRT

10 &lt;213&gt; Homo sapiens

&lt;400&gt; 18

Met Val Leu Glu

1

15 Ser Val Ala Arg Ile Val Lys Val Gln Leu Pro Ala Tyr Leu Lys Arg  
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 Leu Pro Val Pro Glu Ser Ile Thr Gly Phe Ala Arg Leu Thr Val Ser  
                   25                  30                  35  
 Glu Trp Leu Arg Leu Leu Pro Phe Leu Gly Val Leu Ala Leu Leu Gly  
 20                  40                  45                  50  
 Tyr Leu Ala Val Arg Pro Phe Leu Pro Lys Lys Lys Gln Gln Lys Asp  
                   55                  60                  65  
 Ser Leu Ile Asn Leu Lys Ile Gln Lys Glu Asn Pro Lys Val Val Asn  
                   70                  75                  80  
 25 Glu Ile Asn Ile Glu Asp Leu Cys Leu Thr Lys Ala Ala Tyr Cys Arg  
       85                  90                  95                  100  
 Cys Trp Arg Ser Lys Thr Phe Pro Ala Cys Asp Gly Ser His Asn Lys  
                   105                  110                  115  
 His Asn Glu Leu Thr Gly Asp Asn Val Gly Pro Leu Ile Leu Lys Lys  
 30                  120                  125                  130  
 Lys Glu Val

135

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<210> 19

<211> 393

<212> DNA

5      <213> Homo sapiens

<400> 19

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cagccccgca gcgaggtgag atg ccg gtg gcc gtg ggt ccc tac gga caq tcc 113

10 Met Pro Val Ala Val Gly Pro Tyr Gly Gln Ser

**1                      5                      10**

cag cca agc tgc ttc gac cgt gtc aaa atg ggc ttc gtg atg ggt tgc 161

Gln Pro Ser Cys Phe Asp Arg Val Lys Met Gly Phe Val Met Gly Cys

**15                      20                      25**

15 gcc gtg ggc atg gcg gcc ggg gcg ctc ttc ggc acc ttt tcc tgt ctc 209

Ala Val Gly Met Ala Ala Gly Ala Leu Phe Gly Thr Phe Ser Cys Leu

**30                      35                      40**

agg atc gga atg cgg ggt cga gag ctg atg ggc ggc att ggg aaa acc 257

Arg Ile Gly Met Arg Gly Arg Glu Leu Met Gly Gly Ile Gly Lys Thr

20                      45                      50                      55

atg atg cag agt ggc ggc acc ttt ggc aca ttc atg gcc att ggg atg 305

Met Met Gln Ser Gly Gly Thr Phe Gly Thr Phe Met Ala Ile Gly Met

60                      65                      70                      75

ggc atc cga tgc taaccatggt tgccaactac atctgtccct tcc 350

25 Gly Ile Arg Cys

ggc atc cga tgc taaccatggt tgccaactac atctgtccct tcccatcaat ccc 360

Gly Ile Arg Cys

agcccatgta ctaataaaag aaagtctttg agt 393

30            <210> 20

<211> 83

<212> PRT

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&lt;213&gt; Homo sapiens

&lt;400&gt; 20

Met Pro Val Ala Val Gly Pro Tyr Gly Gln Ser  
 5 1 5 10  
 Gln Pro Ser Cys Phe Asp Arg Val Lys Met Gly Phe Val Met Gly Cys  
 15 20 25  
 Ala Val Gly Met Ala Ala Gly Ala Leu Phe Gly Thr Phe Ser Cys Leu  
 30 35 40  
 10 Arg Ile Gly Met Arg Gly Arg Glu Leu Met Gly Gly Ile Gly Lys Thr  
 45 50 55  
 Met Met Gln Ser Gly Gly Thr Phe Gly Thr Phe Met Ala Ile Gly Met  
 60 65 70 75  
 Gly Ile Arg Cys  
 15 Gly Ile Arg Cys

&lt;210&gt; 21

&lt;211&gt; 1033

&lt;212&gt; DNA

20 &lt;213&gt; Homo sapiens

&lt;400&gt; 21

ctttctccgc tggcaacggc gccgctcccc gctcctctc cccagcc atg gcg ttc 56  
 Met Ala Phe  
 25 1  
 acg ttc gcg gcc ttc tgc tac atg ctg gcg ctg ctg ctc act gcc gcg 104  
 Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu Leu Thr Ala Ala  
 5 10 15  
 ctc atc ttc ttc gcc att tgg cac att ata gca ttt gat gag ctg aag 152  
 30 Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala Phe Asp Glu Leu Lys  
 20 25 30 35  
 act gat tac aag aat cct ata gac cag tgt aat acc ctg aat ccc ctt 200



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	Thr	Asp	Tyr	Lys	Asn	Pro	Ile	Asp	Gln	Cys	Asn	Thr	Leu	Asn	Pro	Leu	
						40					45					50	
	gta	ctc	cca	gag	tac	ctc	atc	cac	gct	ttc	ttc	tgt	gtc	atg	ttt	ctt	248
	Val	Leu	Pro	Glu	Tyr	Leu	Ile	His	Ala	Phe	Phe	Cys	Val	Met	Phe	Leu	
5						55					60					65	
	tgt	gca	gca	gag	tgg	ctt	aca	ctg	ggt	ctc	aat	atg	ccc	ctc	ttg	gca	296
	Cys	Ala	Ala	Glu	Trp	Leu	Thr	Leu	Gly	Leu	Asn	Met	Pro	Leu	Leu	Ala	
						70					75					80	
	tat	cat	att	tgg	agg	tat	atg	agt	aga	cca	gtg	atg	agt	ggc	cca	gga	344
10	Tyr	His	Ile	Trp	Arg	Tyr	Met	Ser	Arg	Pro	Val	Met	Ser	Gly	Pro	Gly	
						85					90					95	
	ctc	tat	gac	cct	aca	acc	atc	atg	aat	gca	gat	att	cta	gca	tat	tgt	392
	Leu	Tyr	Asp	Pro	Thr	Thr	Ile	Met	Asn	Ala	Asp	Ile	Leu	Ala	Tyr	Cys	
						100					105					110	
15	cag	aag	gaa	gga	tgg	tgc	aaa	tta	gct	ttt	tat	ctt	cta	gca	ttt	ttt	440
	Gln	Lys	Glu	Gly	Trp	Cys	Lys	Leu	Ala	Phe	Tyr	Leu	Leu	Ala	Phe	Phe	
						120					125					130	
	tac	tac	cta	tat	ggc	atg	atc	tat	gtt	ttg	gtg	agc	tct	tagaacaaca	c		490
	Tyr	Tyr	Leu	Tyr	Gly	Met	Ile	Tyr	Val	Leu	Val	Ser	Ser				
20						135					140						
	acagaagaat	tgggtccagtt	aagtgc	atgc	aaaaagccac	caa	aatgaagg	gattctatcc									550
	agcaagatcc	tgtccaagag	tagcctgtgg	aatctgatca	gttacttta	aaa	atgactc										610
	cttatttttt	aaatgtttcc	acatttttgc	ttgtggaaag	actgttttca	tatgttatac											670
	tcagataaag	attttaaatg	gtattacgta	taaattaata	taaaatgatt	acctctggtg											730
25	ttgacagggt	tgaacttgca	cttcttaagg	aacagccata	atcctctgaa	tgatgcatta											790
	attactgact	gtcctagtag	attggaagct	tttgtttata	ggaacttgta	gggctcattt											850
	tggtttcatt	gaaacagtat	ctaattataa	attagctgta	gatatacagg	gcttctgatg											910
	aagtgaaaat	gtatatctga	ctagtgggaa	acttcatggg	tttcctcatc	tgatcatgctg											970
	atgattatat	atggatacat	ttacaaaaat	aaaaagcggg	aattttccct	tcgcttgaat											1030
30	att																1033

&lt;210&gt; 22

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&lt;211&gt; 144

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

5 &lt;400&gt; 22

Met Ala Phe

1

Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu Leu Thr Ala Ala

5

10

15

10 Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala Phe Asp Glu Leu Lys

20

25

30

35

Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys Asn Thr Leu Asn Pro Leu

40

45

50

Val Leu Pro Glu Tyr Leu Ile His Ala Phe Phe Cys Val Met Phe Leu

15

55

60

65

Cys Ala Ala Glu Trp Leu Thr Leu Gly Leu Asn Met Pro Leu Leu Ala

70

75

80

Tyr His Ile Trp Arg Tyr Met Ser Arg Pro Val Met Ser Gly Pro Gly

85

90

95

20 Leu Tyr Asp Pro Thr Thr Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys

100

105

110

115

Gln Lys Glu Gly Trp Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe

120

125

130

Tyr Tyr Leu Tyr Gly Met Ile Tyr Val Leu Val Ser Ser

25

135

140

&lt;210&gt; 23

&lt;211&gt; 1270

&lt;212&gt; DNA

30 &lt;213&gt; Homo sapiens

&lt;400&gt; 23

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	ccccgccccca	accccgcgcg	tgcgctg	cgagggataag	agagcggtct	ggacagcgcg	60	
	tggccggcg	cgctgtggg	acagc	atg agc ggc ggt	tgg atg gcg cag gtt		112	
	Met Ser Gly Gly Trp Met Ala Gln Val							
	1			5				
5	gga gcg tgg cga aca ggg gct ctg ggc ctg gcg ctg ctg ctg ctg ctc							160
	Gly Ala Trp Arg Thr Gly Ala Leu Gly Leu Ala Leu Leu Leu Leu							
	10	15	20	25				
	ggc ctc gga cta ggc ctg gag gcc gcc gcg agc ccg ctt tcc acc ccg							208
	Gly Leu Gly Leu Gly Leu Glu Ala Ala Ala Ser Pro Leu Ser Thr Pro							
10	30	35	40					
	acc tct gcc cag gcc gca ggc ccc agc tca ggc tcg tgc cca ccc acc							256
	Thr Ser Ala Gln Ala Ala Gly Pro Ser Ser Gly Ser Cys Pro Pro Thr							
	45	50	55					
	aag ttc cag tgc cgc acc agt ggc tta tgc gtg ccc ctc acc tgg cgc							304
15	Lys Phe Gln Cys Arg Thr Ser Gly Leu Cys Val Pro Leu Thr Trp Arg							
	60	65	70					
	tgc gac agg gac ttg gac tgc agc gat ggc agc gat gag gag gag tgc							352
	Cys Asp Arg Asp Leu Asp Cys Ser Asp Gly Ser Asp Glu Glu Glu Cys							
	75	80	85					
20	agg att gag cca tgt acc cag aaa ggg caa tgc cca ccg ccc cct ggc							400
	Arg Ile Glu Pro Cys Thr Gln Lys Gly Gln Cys Pro Pro Pro Pro Gly							
	90	95	100	105				
	ctc ccc tgc ccc tgc acc ggc gtc agt gac tgc tct ggg gga act gac							448
	Leu Pro Cys Pro Cys Thr Gly Val Ser Asp Cys Ser Gly Gly Thr Asp							
25	110	115	120					
	aag aaa ctg cgc aac tgc agc cgc ctg gcc tgc cta gca ggc gag ctc							496
	Lys Lys Leu Arg Asn Cys Ser Arg Leu Ala Cys Leu Ala Gly Glu Leu							
	125	130	135					
	cgt tgc acg ctg agc gat gac tgc att cca ctc acg tgg cgc tgc gac							544
30	Arg Cys Thr Leu Ser Asp Asp Cys Ile Pro Leu Thr Trp Arg Cys Asp							
	140	145	150					
	ggc cac cca gac tgt ccc gac tcc agc gac gag ctc ggc tgt gga acc							592

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	Gly His Pro Asp Cys Pro Asp Ser Ser Asp Glu Leu Gly Cys Gly Thr	
	155 160 165	
	aat gag atc ctc ccg gaa ggg gat gcc aca acc atg ggg ccc cct gtg	640
	Asn Glu Ile Leu Pro Glu Gly Asp Ala Thr Thr Met Gly Pro Pro Val	
5	170 175 180 185	
	acc ctg gag agt gtc acc tct ctc agg aat gcc aca acc atg ggg ccc	688
	Thr Leu Glu Ser Val Thr Ser Leu Arg Asn Ala Thr Thr Met Gly Pro	
	190 195 200	
	cct gtg acc ctg gag agt gtc ccc tct gtc ggg aat gcc aca tcc tcc	736
10	Pro Val Thr Leu Glu Ser Val Pro Ser Val Gly Asn Ala Thr Ser Ser	
	205 210 215	
	tct gcc gga gac cag tct gga agc cca act gcc tat ggg gtt att gca	784
	Ser Ala Gly Asp Gln Ser Gly Ser Pro Thr Ala Tyr Gly Val Ile Ala	
	220 225 230	
15	gct gct gcg gtg ctc agt gca agc ctg gtc acc gcc acc ctc ctc ctt	832
	Ala Ala Ala Val Leu Ser Ala Ser Leu Val Thr Ala Thr Leu Leu Leu	
	235 240 245	
	ttg tcc tgg ctc cga gcc cag gag cgc ctc cgc cca ctg ggg tta ctg	880
	Leu Ser Trp Leu Arg Ala Gln Glu Arg Leu Arg Pro Leu Gly Leu Leu	
20	250 255 260 265	
	gtg gcc atg aag gag tcc ctg ctg ctg tca gaa cag aag acc tcg ctg	928
	Val Ala Met Lys Glu Ser Leu Leu Leu Ser Glu Gln Lys Thr Ser Leu	
	270 275 280	
	ccc tgaaggacaag cacttgccac caccgtcact cagccctggg cgtagccgg	980
25	Pro	
	acaggaggag agcagtgatg cggatgggta cccgggcaca ccagccctca gagacctgag	1040
	ctctttctggc cacgtggaac ctggaacccg agctcctgca gaagtggccc tggagattga	1100
	gggtccctgg acactcccta tggagatccg gggagctagg atggggaacc tgccacagcc	1160
30	agaactgagg ggctggcccc aggcagctcc cagggggtag aacggccctg tgcttaagac	1220
	actcctgctg ccccgctctga gggtggcgat taaagttgct tcacatcctc	1270

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<210> 24

**<211> 282**

<212> PRT

<213> Homo sapiens

5

**<400> 24**

Met Ser Gly Gly Trp Met Ala Gln Val

1

5

	Gly	Ala	Trp	Arg	Thr	Gly	Ala	Leu	Gly	Leu	Ala	Leu	Leu	Leu	Leu	Leu
10	10					15					20					25
	Gly	Leu	Gly	Leu	Gly	Leu	Glu	Ala	Ala	Ala	Ser	Pro	Leu	Ser	Thr	Pro
					30					35					40	
	Thr	Ser	Ala	Gln	Ala	Ala	Gly	Pro	Ser	Ser	Gly	Ser	Cys	Pro	Pro	Thr
				45					50					55		
15	Lys	Phe	Gln	Cys	Arg	Thr	Ser	Gly	Leu	Cys	Val	Pro	Leu	Thr	Trp	Arg
		60						65					70			
	Cys	Asp	Arg	Asp	Leu	Asp	Cys	Ser	Asp	Gly	Ser	Asp	Glu	Glu	Glu	Cys
		75					80					85				
	Arg	Ile	Glu	Pro	Cys	Thr	Gln	Lys	Gly	Gln	Cys	Pro	Pro	Pro	Pro	Gly
20	90					95					100					105
	Leu	Pro	Cys	Pro	Cys	Thr	Gly	Val	Ser	Asp	Cys	Ser	Gly	Gly	Thr	Asp
						110				115					120	
	Lys	Lys	Leu	Arg	Asn	Cys	Ser	Arg	Leu	Ala	Cys	Leu	Ala	Gly	Glu	Leu
				125					130					135		
25	Arg	Cys	Thr	Leu	Ser	Asp	Asp	Cys	Ile	Pro	Leu	Thr	Trp	Arg	Cys	Asp
		140						145						150		
	Gly	His	Pro	Asp	Cys	Pro	Asp	Ser	Ser	Asp	Glu	Leu	Gly	Cys	Gly	Thr
		155					160					165				
	Asn	Glu	Ile	Leu	Pro	Glu	Gly	Asp	Ala	Thr	Thr	Met	Gly	Pro	Pro	Val
30	170					175					180					185
	Thr	Leu	Glu	Ser	Val	Thr	Ser	Leu	Arg	Asn	Ala	Thr	Thr	Met	Gly	Pro
						190				195					200	

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	Pro Val Thr Leu Glu Ser Val Pro Ser Val Gly Asn Ala Thr Ser Ser	
	205	210
		215
	Ser Ala Gly Asp Gln Ser Gly Ser Pro Thr Ala Tyr Gly Val Ile Ala	
	220	225
		230
5	Ala Ala Ala Val Leu Ser Ala Ser Leu Val Thr Ala Thr Leu Leu Leu	
	235	240
		245
	Leu Ser Trp Leu Arg Ala Gln Glu Arg Leu Arg Pro Leu Gly Leu Leu	
	250	255
		260
		265
	Val Ala Met Lys Glu Ser Leu Leu Leu Ser Glu Gln Lys Thr Ser Leu	
10		270
		275
		280
	Pro	
	<210> 25	
	<211> 836	
15	<212> DNA	
	<213> Homo sapiens	
	<400> 25	
	aaaaaaaaagg aaatgacgaa ggcagagggc gtccaggtcc gtcggtaac cgtttcccgc	60
20	gcgcccggcc ccgactccgg ggtaaagagc cccggagcgg agcagcgctg gccgcgtgcc	120
	gcctccggag ccggcagccc ccatggctgg gggttatgga gtg atg ggt gac gat	175
		Met Gly Asp Asp
		1
	ggt tct att gat tat act gtt cac gaa gcc tgg aat gaa gcc acc aat	223
25	Gly Ser Ile Asp Tyr Thr Val His Glu Ala Trp Asn Glu Ala Thr Asn	
	5	10
		15
		20
	ggt tac ttg ata gtt atc ctt gtt agc ttc ggt ctc ttc atg tat gcc	271
	Val Tyr Leu Ile Val Ile Leu Val Ser Phe Gly Leu Phe Met Tyr Ala	
	25	30
		35
30	aaa agg aac aaa agg aga att atg agg ata ttc agt gtg cca cct aca	319
	Lys Arg Asn Lys Arg Arg Ile Met Arg Ile Phe Ser Val Pro Pro Thr	
	40	45
		50

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	gag gaa act ttg tca gag ccc aac ttt tat gac acg ata agc aag att	367
	Glu Glu Thr Leu Ser Glu Pro Asn Phe Tyr Asp Thr Ile Ser Lys Ile	
	55 60 65	
	cgt tta aga caa caa ctg gaa atg tat tcc att tca aga aag tac gac	415
5	Arg Leu Arg Gln Gln Leu Glu Met Tyr Ser Ile Ser Arg Lys Tyr Asp	
	70 75 80	
	tat cag cag cca caa aac caa gct gac agt gtg caa ctc tca ttg gaa	463
	Tyr Gln Gln Pro Gln Asn Gln Ala Asp Ser Val Gln Leu Ser Leu Glu	
	85 90 95 100	
10	tgaaacc tcagaaaaag agcaacagaa gtaattgttt caagctcctg attctttcta	520
	ctaaatcatg aacagcttta aaaacatttc tgtctgcata aaattatttt acttgtaact	580
	tttccccaat tgttctgtgc attgttttgc ctttttaaata tacatctcca agtggctcaa	640
	aaggccttga cacaggggaac ctgcacatat ccaggatatg tgtaaccagc gatggtgact	700
	tgaccttgcc aagacctgtg attccttcag gatacaatca gtgagaaata aaaacacatc	760
15	ttgggaagtg ggaatcctgg agtttatgcc atttgcaata ttaaaaaata aaaatgcaag	820
	ttattatttc aataat	836
	<210> 26	
	<211> 100	
20	<212> PRT	
	<213> Homo sapiens	
	<400> 26	
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25		1
	Gly Ser Ile Asp Tyr Thr Val His Glu Ala Trp Asn Glu Ala Thr Asn	
	5 10 15 20	
	Val Tyr Leu Ile Val Ile Leu Val Ser Phe Gly Leu Phe Met Tyr Ala	
	25 30 35	
30	Lys Arg Asn Lys Arg Arg Ile Met Arg Ile Phe Ser Val Pro Pro Thr	
	40 45 50	
	Glu Glu Thr Leu Ser Glu Pro Asn Phe Tyr Asp Thr Ile Ser Lys Ile	

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	55	60	65	
	Arg Leu Arg Gln Gln Leu Glu Met Tyr Ser Ile Ser Arg Lys Tyr Asp			
	70	75	80	
	Tyr Gln Gln Pro Gln Asn Gln Ala Asp Ser Val Gln Leu Ser Leu Glu			
5	85	90	95	100
	<210> 27			
	<211> 1022			
	<212> DNA			
10	<213> Homo sapiens			
	<400> 27			
	agccctcccg ccgcccgcgc gcaggtcccg aggagcgcag actgtgtccc tgaca atg			
				58
				Met
15				1
	gga aca gcc gac agt gat gag atg gcc ccg gag gcc cca cag cac acc			
	106			
	Gly Thr Ala Asp Ser Asp Glu Met Ala Pro Glu Ala Pro Gln His Thr			
	5	10	15	
	cac atc gat gtg cac atc cac cag gag tct gcc ctg gcc aag ctc ctg			
	154			
20	His Ile Asp Val His Ile His Gln Glu Ser Ala Leu Ala Lys Leu Leu			
	20	25	30	
	ctc acc tgc tgc tct gcg ctg cgg ccc cgg gcc acc cag gcc agg ggc			
	202			
	Leu Thr Cys Cys Ser Ala Leu Arg Pro Arg Ala Thr Gln Ala Arg Gly			
	35	40	45	
25	agc agc cgg ctg ctg gtg gcc tcg tgg gtg atg cag atc gtg ctg ggg			
	250			
	Ser Ser Arg Leu Leu Val Ala Ser Trp Val Met Gln Ile Val Leu Gly			
	50	55	60	65
	atc ttg agt gca gtc cta gga gga ttt ttc tac atc cgc gac tac acc			
	298			
	Ile Leu Ser Ala Val Leu Gly Gly Phe Phe Tyr Ile Arg Asp Tyr Thr			
30	70	75	80	
	ctc ctc gtc acc tcg gga gct gcc atc tgg aca ggg gct gtg gct gtg			
	346			
	Leu Leu Val Thr Ser Gly Ala Ala Ile Trp Thr Gly Ala Val Ala Val			



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	85	90	95	
	ctg gct gga gct gct gcc ttc att tac gag aaa cgg ggt ggt aca tac			394
	Leu Ala Gly Ala Ala Ala Phe Ile Tyr Glu Lys Arg Gly Gly Thr Tyr			
	100	105	110	
5	tgg gcc ctg ctg agg act ctg cta gcg ctg gca gct ttc tcc aca gcc			442
	Trp Ala Leu Leu Arg Thr Leu Leu Ala Leu Ala Ala Phe Ser Thr Ala			
	115	120	125	
	atc gct gcc ctc aaa ctt tgg aat gaa gat ttc cga tat ggc tac tct			490
	Ile Ala Ala Leu Lys Leu Trp Asn Glu Asp Phe Arg Tyr Gly Tyr Ser			
10	130	135	140	145
	tat tac aac agt gcc tgc cgc atc tcc agc tcg agt gac tgg aac act			538
	Tyr Tyr Asn Ser Ala Cys Arg Ile Ser Ser Ser Ser Asp Trp Asn Thr			
	150	155	160	
	cca gcc ccc act cag agt cca gaa gaa gtc aga agg cta cac cta tgt			586
15	Pro Ala Pro Thr Gln Ser Pro Glu Glu Val Arg Arg Leu His Leu Cys			
	165	170	175	
	acc tcc ttc atg gac atg ctg aag gcc ttg ttc aga acc ctt cag gcc			634
	Thr Ser Phe Met Asp Met Leu Lys Ala Leu Phe Arg Thr Leu Gln Ala			
	180	185	190	
20	atg ctc ttg ggt gtc tgg att ctg ctg ctt ctg gca tct ctg gcc cct			682
	Met Leu Leu Gly Val Trp Ile Leu Leu Leu Leu Ala Ser Leu Ala Pro			
	195	200	205	
	ctg tgg ctg tac tgc tgg aga atg ttc cca acc aaa ggg gtg agt ccc			730
	Leu Trp Leu Tyr Cys Trp Arg Met Phe Pro Thr Lys Gly Val Ser Pro			
25	210	215	220	225
	taagaaaaga gaccagaagg aaatgttgga agtgagtgga atctagccat gcctctcctg			790
	attattagtg cctggtgctt ctgcaccggg cgtccttgca tctgactgct ggaagaagaa			850
	ccagactgag gaaaagaggc tcttcaacag cccagttat cctggcccca tgaccgtggc			910
	cacagccctg ctccagcagc acttgcccat tccttacacc ccttcccat cctgctccgc			970
30	ttcatgtccc ctctgagta gtcattgtgat aataaactct catgttattg tt			1022

&lt;210&gt; 28

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&lt;211&gt; 225

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

5 &lt;400&gt; 28

Met

1

Gly Thr Ala Asp Ser Asp Glu Met Ala Pro Glu Ala Pro Gln His Thr  
                   5                  10                  15  
 10 His Ile Asp Val His Ile His Gln Glu Ser Ala Leu Ala Lys Leu Leu  
                   20                  25                  30  
 Leu Thr Cys Cys Ser Ala Leu Arg Pro Arg Ala Thr Gln Ala Arg Gly  
                   35                  40                  45  
 Ser Ser Arg Leu Leu Val Ala Ser Trp Val Met Gln Ile Val Leu Gly  
 15 50                  55                  60                  65  
 Ile Leu Ser Ala Val Leu Gly Gly Phe Phe Tyr Ile Arg Asp Tyr Thr  
                   70                  75                  80  
 Leu Leu Val Thr Ser Gly Ala Ala Ile Trp Thr Gly Ala Val Ala Val  
                   85                  90                  95  
 20 Leu Ala Gly Ala Ala Ala Phe Ile Tyr Glu Lys Arg Gly Gly Thr Tyr  
                   100                  105                  110  
 Trp Ala Leu Leu Arg Thr Leu Leu Ala Leu Ala Ala Phe Ser Thr Ala  
                   115                  120                  125  
 Ile Ala Ala Leu Lys Leu Trp Asn Glu Asp Phe Arg Tyr Gly Tyr Ser  
 25 130                  135                  140                  145  
 Tyr Tyr Asn Ser Ala Cys Arg Ile Ser Ser Ser Ser Asp Trp Asn Thr  
                   150                  155                  160  
 Pro Ala Pro Thr Gln Ser Pro Glu Glu Val Arg Arg Leu His Leu Cys  
                   165                  170                  175  
 30 Thr Ser Phe Met Asp Met Leu Lys Ala Leu Phe Arg Thr Leu Gln Ala  
                   180                  185                  190  
 Met Leu Leu Gly Val Trp Ile Leu Leu Leu Leu Ala Ser Leu Ala Pro

195				200				205							
Leu	Trp	Leu	Tyr	Cys	Trp	Arg	Met	Phe	Pro	Thr	Lys	Gly	Val	Ser	Pro
210					215					220					225